FIG. 6, and the width dimension of the sensitive region E of the multilayer film **60** is thus larger than the width dimension of the sensitive region E of the multilayer film **48**.

[**0227**] The electrode layers **51** and **51** formed on both sides of the multilayer film **60** extend over the multilayer film **60**, and the insensitive regions D and D of the multilayer film **60** are covered with the electrode layers **51** and **51**.

[**0228**] The width dimension T18 of each of the electrode layers **51** and **51** extending over the insensitive regions D and D of the multilayer film **60** preferably falls within a range from 0 μm to 0.08 μm. More preferably, the width dimension T18 falls within a range from 0.05 μm to 0.08 μm. The angle θ7 made between the top surface **15***a* of the protective layer **15** and an end face **51***a* of the electrode layer **51** extending over the insensitive region of the multilayer film **60** is preferably 20 degrees or greater, and more preferably 25 degrees or greater. This arrangement prevents the sense current from shunting into the insensitive region, thereby controlling the generation of noise.

[**0229**] If the angle θ7 made between the top surface **15***a* and the end face **51***a* is too large, a short is likely to occur between the electrode layer **51** and a top shield layer of a soft magnetic material when the top shield layer is deposited over the protective layer **15** and the electrode layers **51** and **51**. The angle θ7 made between the top surface **15***a* and the end face **51***a* is preferably 60 degrees or smaller, and more preferably, 45 degrees or smaller.

[**0230**] **FIG. 8** is a cross-sectional view of the magnetoresistive-effect device of an eighth embodiment of the present invention, viewed from an ABS side thereof.

[**0231**] The magnetoresistive-effect device shown in **FIG. 8** is called an anisotropic magnetoresistive-effect (AMR) device. A soft magnetic layer (a SAL layer) **52**, a nonmagnetic layer (a shunt layer) **53**, a magnetoresistive layer (MR layer) **54**, and a protective layer **55** are successively laminated in that order to form a multilayer film **61**. Hard bias layers **56** and **56** are formed on both sides of the multilayer film **61**. Typically, the soft magnetic layer **52** is made of an NiFeNb alloy, the nonmagnetic layer **53** is made of Ta, the magnetoresistive layer **54** is made of an NiFe alloy, and the hard bias layers **56** and **56** are made of a CoPt alloy.

[**0232**] In the eight embodiment again, the sensitive region E and the insensitive regions D and D of the multilayer film **61** are measured using the micro track profile method. The portion having the width dimension T19 centrally positioned on the multilayer film **61** is the sensitive region E, and the portions, each having the width dimension T20, are the insensitive regions D and D.

[**0233**] Intermediate layers **57** and **57**, made of a nonmagnetic material, are respectively deposited on the hard bias layers **56** and **56** on both sides of the multilayer film **61**, and electrode layers **58** and **58**, made of Cr, Au, Ta, or W, are respectively formed on the intermediate layers **57** and **57**.

[**0234**] Referring to **FIG. 8**, the electrode layers **58** and **58** are formed to extend over the multilayer film **61**. The width dimension of the top surface of the multilayer film **61** having no electrode layer **58** thereon is the optical read track width O-Tw, and the width dimension of the sensitive region E not covered with the electrode layer **58** is the magnetic read track width M-Tw. In the eighth embodiment, the electrode layers **58** and **58** extending over the multilayer film **61** fully cover the insensitive regions D and D. The optical read track width O-Tw is thus approximately equal to the magnetic read track width M-Tw.

[**0235**] It is not a requirement that the electrode layers **58** and **58** fully cover the insensitive regions D and D, and the width dimension T21 of the electrode layer **58** extending over the multilayer film **61** may be smaller than the insensitive region D. In this case, the optical read track width O-Tw becomes larger than the magnetic read track width M-Tw.

[**0236**] This arrangement makes it easier for the sense current to directly flow from the electrode layer **51** into the multilayer film **48** without passing through the hard bias layer **49**. With the electrode layers **58** and **58** respectively extending over the insensitive regions D and D, the junction area between the multilayer film **61** and the hard bias layer **56** and the electrode layer **58** is increased, reducing the direct current resistance (DCR) and thereby improving the reproduction characteristics.

[**0237**] Furthermore, the electrode layers **58** and **58** respectively extending over the insensitive regions D and D prevent the sense current flowing into the insensitive regions D and D, thereby controlling the generation of noise.

[**0238**] The width dimension T21 of each of the electrode layers **58** and **58** extending over the insensitive regions D and D of the multilayer film **61** preferably falls within a range from 0 μm to 0.08 μm. More preferably, the width dimension T21 falls within a range from 0.05 μm to 0.08 μm.

[**0239**] In the AMR device, the hard bias layer **56** is magnetized in the X direction as shown, and the magnetoresistive layer **54** is supplied with the bias magnetic field in the X direction by the hard bias layer **56**. Furthermore, the magnetoresistive layer **54** is supplied with the bias field in the Y direction by the soft magnetic layer **52**. With the magnetoresistive layer **54** supplied with the bias magnetic fields in the X direction and Y direction, a variation in magnetization thereof in response to a variation in the magnetic field becomes linear.

[**0240**] The sense current from the electrode layer **58** is directly fed to the magnetoresistive layer **54** in the sensitive region E. The direction of the advance of the recording medium is aligned with the Z direction. When a leakage magnetic field from the recording medium in the Y direction is applied, the magnetization direction of the magnetoresistive layer **54** varies, causing a variation in the resistance. The resistance variation is then detected as a voltage variation.

[**0241**] The angle θ8 made between the top surface **55***a* of the protective layer **55** and an end face **58***a* of the electrode layer **58** extending over the insensitive region of the multilayer film **61** is preferably 20 degrees or greater, and more preferably 25 degrees or greater. This arrangement prevents the sense current from shunting into the insensitive region, thereby controlling the generation of noise.

[**0242**] If the angle θ8 made between the top surface **55***a* and the end face **58***a* is too large, a short is likely to occur between the electrode layer **58** and a top shield layer of a soft magnetic material when the top shield layer is deposited over the protective layer **55** and the electrode layers **58** and **58**. The angle θ8 made between the top surface **55***a* and the